

10/518,939

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STN-Structure Sealed  
8.14.06

X. L4 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2006:47976 CAPLUS

DOCUMENT NUMBER: 144:285627

TITLE: Identification of a Novel Spiropiperidine Opioid Receptor-like 1 Antagonist Class by a Focused Library Approach Featuring 3D-Pharmacophore Similarity

AUTHOR(S): Goto, Yasuhiro; Arai-Otsuki, Sachie; Tachibana, Yukari; Ichikawa, Daisuke; Ozaki, Satoshi; Takahashi, Hiroyuki; Iwasawa, Yoshikazu; Okamoto, Osamu; Okuda, Shoki; Ohta, Hisashi; Sagara, Takeshi

CORPORATE SOURCE: Banyu Tsukuba Research Institute, Banyu Pharmaceutical Co., Ltd., Tsukuba, 300-2611, Japan

SOURCE: Journal of Medicinal Chemistry (2006), 49(3), 847-849  
CODEN: JMCMAR; ISSN: 0022-2623

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A focused library approach identifying novel leads to develop a potent ORL1 antagonist is described. Beginning from a compound identified by random screening, an exploratory library that exhibited a diverse display of pharmacophores was designed. After evaluating ORL1 antagonistic activity, a highly focused library was designed based on 3D-pharmacophore similarity to known actives. A novel D-proline amide class was identified in this library and was found to possess potent ORL1 antagonistic activity.

IT 878230-70-7P 878233-84-2P 878234-31-2P

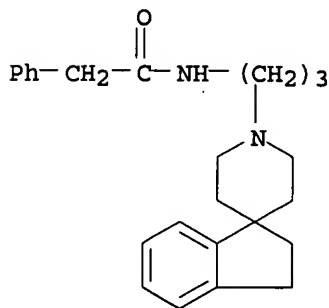
878235-02-0P 878235-10-0P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(identification of a spiropiperidine opioid receptor-like 1 antagonist class by a focused library approach featuring 3D-pharmacophore similarity)

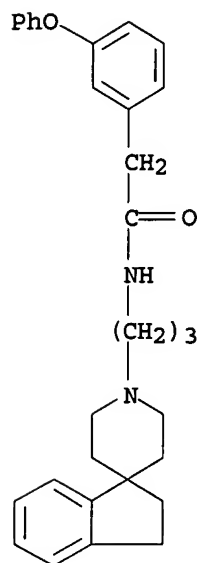
RN 878230-70-7 CAPLUS

CN Benzeneacetamide, N-[3-(2,3-dihydrospiro[1H-indene-1,4'-piperidin]-1'-yl)propyl]- (9CI) (CA INDEX NAME)



RN 878233-84-2 CAPLUS

CN Benzeneacetamide, N-[3-(2,3-dihydrospiro[1H-indene-1,4'-piperidin]-1'-yl)propyl]- $\alpha$ -methoxy- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2005:1016895 CAPLUS  
 DOCUMENT NUMBER: 143:415586  
 TITLE: G-Protein-Coupled Receptor Affinity Prediction Based on the Use of a Profiling Dataset: QSAR Design, Synthesis, and Experimental Validation  
 AUTHOR(S): Rolland, Catherine; Gozalbes, Rafael; Nicolaie, Eric; Paugam, Marie-France; Coussy, Laurent; Barbosa, Frederique; Horvath, Dragos; Revah, Frederic  
 CORPORATE SOURCE: Cerep, Rueil-Malmaison, 92500, Fr.  
 SOURCE: Journal of Medicinal Chemistry (2005), 48(21), 6563-6574  
 CODEN: JMCMAR; ISSN: 0022-2623  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB A QSAR model accounting for "average" G-protein-coupled receptor (GPCR) binding was built from a large set of exptl. standardized binding data (1939 compds. systematically tested over 40 different GPCRs) and applied to the design of a library of "GPCR-predicted" compds. Three hundred and sixty of these compds. were randomly selected and tested in 21 GPCR binding assays. Positives were defined by their ability to inhibit by more than 70% the binding of reference compds. at 10  $\mu$ M. A 5.5-fold enrichment in positives was observed when comparing the "GPCR-predicted" compds. with 600 randomly selected compds. predicted as "non-GPCR" from a general collection. The model was efficient in predicting strongest binders, since enrichment was greater for higher cutoffs. Significant enrichment was also observed for peptidic GPCRs and receptors not included to develop the QSAR model, suggesting the usefulness of the model to design ligands binding with newly identified GPCRs, including orphan ones.

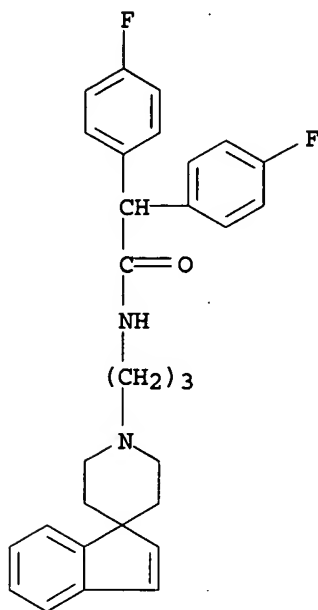
IT 644974-13-0  
 RL: PAC (Pharmacological activity); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (QSAR design, synthesis, and exptl. validation of G-protein-coupled receptor affinity prediction based on use of a profiling dataset)

RN 644974-13-0 CAPLUS

CN Benzeneacetamide, 4-fluoro- $\alpha$ -(4-fluorophenyl)-N-(3-spiro[1H-indene-

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1,4'-piperidin]-1'-ylpropyl) - (9CI) (CA INDEX NAME)



REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:675723 CAPLUS

DOCUMENT NUMBER: 141:207056

TITLE: Preparation of piperidine derivatives as Melanin-concentrating hormone receptor antagonists

INVENTOR(S): Moriya, Minoru; Sakamoto, Toshihiro; Ishikawa, Makoto; Kanatani, Akio; Fukami, Takehiro

PATENT ASSIGNEE(S): Banyu Pharmaceutical Co., Ltd., Japan

SOURCE: PCT Int. Appl., 128 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

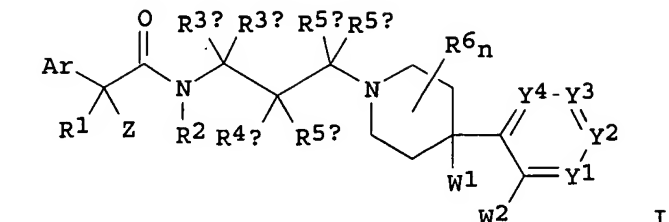
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

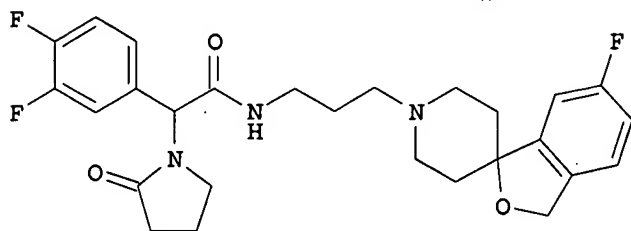
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004069798	A1	20040819	WO 2004-JP1326	20040209
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI			
RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2004209505	A1	20040819	AU 2004-209505	20040209
CA 2515717	AA	20040819	CA 2004-2515717	20040209
EP 1595867	A1	20051116	EP 2004-709372	20040209
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
US 2006106046	A1	20060518	US 2006-544261	20060117
PRIORITY APPLN. INFO.:			JP 2003-32123	A 20030210

OTHER SOURCE(S):  
GI

MARPAT 141:207056



I



II

AB Title compds. presented by the formula I [wherein R1 = H, hydroxy, (halo)alkyl; R2, R3a, R3b, R5a, R5b = independently H or (halo)alkyl; R4a, R4b = independently H, halo, hydroxy, (halo)alkyl; R6 = H, halo, (halo)alkyl; n = 1-8; W1, W2 = H or W1W2 = OCH2, CH2CH2, CH2O; Z = alkyl or (un)substituted (hetero)cyclic ring; R1Z = (un)substituted (hetero)cyclic ring; Ar = (un)substituted (hetero)aryl; Y1-Y4 = (un)substituted methylene or N; and pharmaceutically acceptable salts thereof] were prepared as melanin concentrating hormone receptor antagonists

(no

data). For example, II was given in a 3-steps synthesis starting from the reaction of spiro[6-fluoroisobenzofuran-1(3H),4'-piperidine]•HCl with N-(3-bromopropyl)phthalimide. Thus, I and their pharmaceutical compns. are useful as antagonist against melanin -concentrating hormone receptor for

the

treatment of CNS diseases, circulatory diseases, or metabolic diseases (no data).

IT 644974-77-6P 741681-65-2P 741681-66-3P

741681-67-4P 741681-69-6P 741681-71-0P

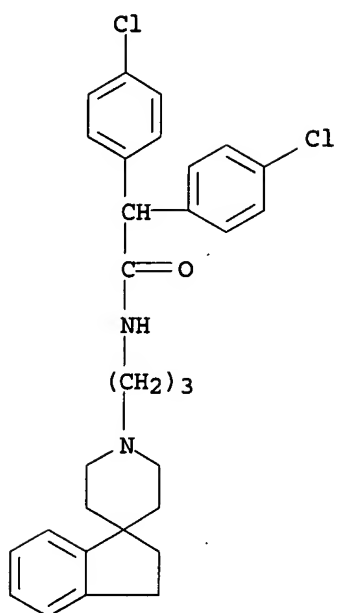
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of piperidine derivs. as melanin-concentrating hormone receptor antagonists)

RN 644974-77-6 CAPLUS

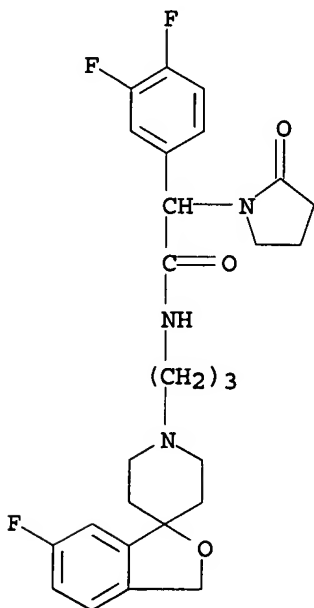
CN Benzeneacetamide, 4-chloro- $\alpha$ -(4-chlorophenyl)-N-[3-(2,3-dihydrospiro[1H-indene-1,4'-piperidin]-1'-yl)propyl]- (9CI) (CA INDEX NAME)

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RN 741681-65-2 CAPLUS

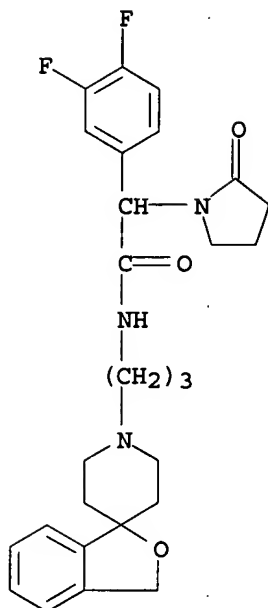
CN 1-Pyrrolidineacetamide,  $\alpha$ -(3,4-difluorophenyl)-N-[3-(6-fluorospiro[isobenzofuran-1(3H),4'-piperidin]-1'-yl)propyl]-2-oxo- (9CI)  
(CA INDEX NAME)



RN 741681-66-3 CAPLUS

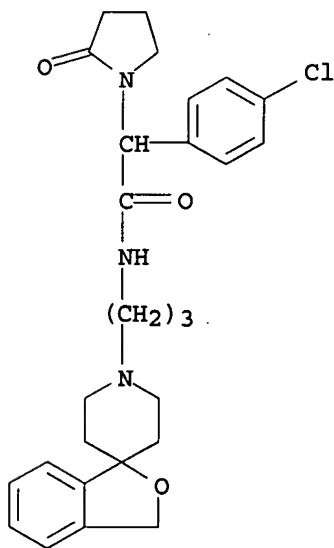
CN 1-Pyrrolidineacetamide,  $\alpha$ -(3,4-difluorophenyl)-2-oxo-N-(3-spiro[isobenzofuran-1(3H),4'-piperidin]-1'-yl)propyl)- (9CI) (CA INDEX NAME)

10/518,939



RN 741681-67-4 CAPLUS

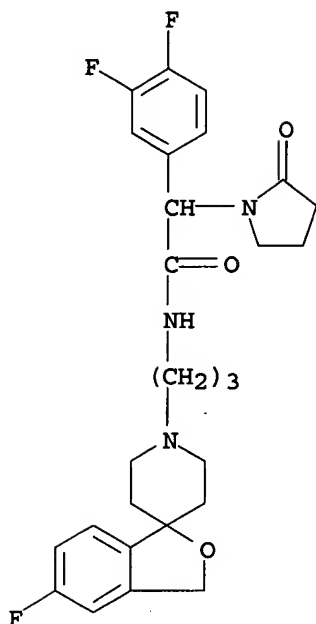
CN 1-Pyrrolidineacetamide, α-(4-chlorophenyl)-2-oxo-N-(3-spiro[isobenzofuran-1(3H),4'-piperidin]-1'-yl)propyl)- (9CI) (CA INDEX NAME)



RN 741681-69-6 CAPLUS

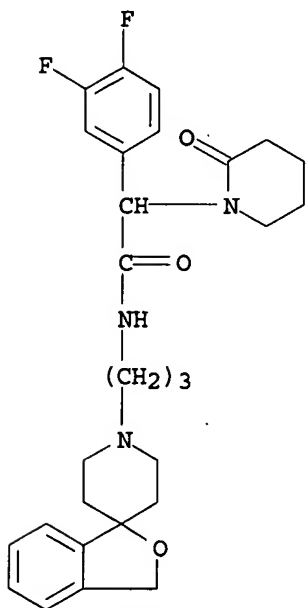
CN 1-Pyrrolidineacetamide, α-(3,4-difluorophenyl)-N-[3-(5-fluorospiro[isobenzofuran-1(3H),4'-piperidin]-1'-yl)propyl]-2-oxo- (9CI) (CA INDEX NAME)

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RN 741681-71-0 CAPLUS

CN 1-Piperidineacetamide,  $\alpha$ -(3,4-difluorophenyl)-2-oxo-N-(3-spiro[isobenzofuran-1(3H),4'-piperidin]-1'-ylpropyl)-(9CI) (CA INDEX NAME)



L4 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:41265 CAPLUS

DOCUMENT NUMBER: 140:93931

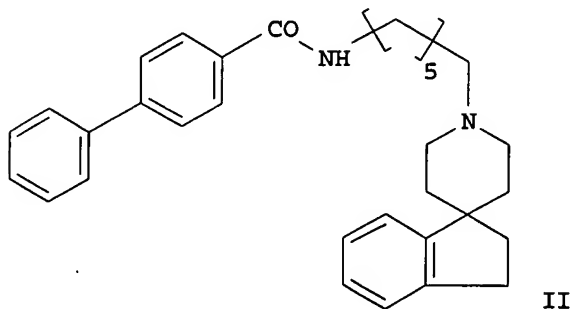
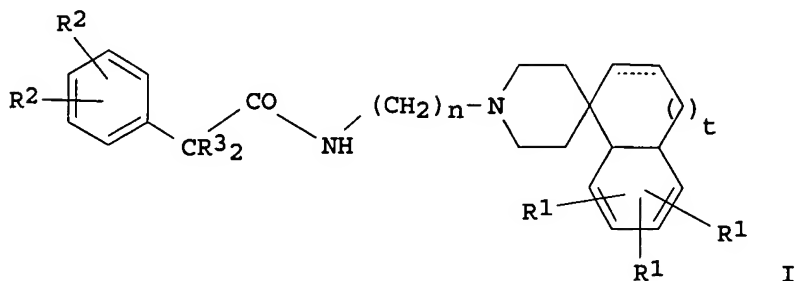
TITLE: Preparation of spirocyclic piperidines as selective MCH1 antagonists with therapeutic uses

INVENTOR(S): Marzabadi, Mohammad; Jiang, Allen; Lu, Kai; Chen, Chien-An; Deleon, John; Wetzal, John

10/518,939

PATENT ASSIGNEE(S): Synaptic Pharmaceutical Corporation, USA  
SOURCE: PCT Int. Appl., 140 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

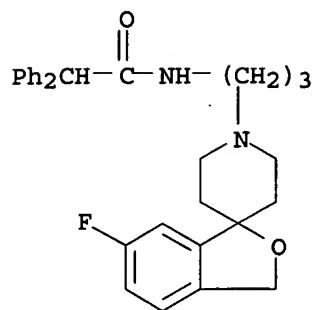
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RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2003261133	A1	20040123	AU 2003-261133	20030703
CA 2485375	AA	20040715	CA 2003-2485375	20030703
BR 2003012256	A	20050426	BR 2003-12256	20030703
EP 1531816	A1	20050525	EP 2003-763351	20030703
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
CN 1668300	A	20050914	CN 2003-815883	20030703
JP 2006501188	T2	20060112	JP 2004-520024	20030703
US 2006173027	A1	20060803	US 2004-518939	20041217
NO 2005000145	A	20050111	NO 2005-145	20050111
PRIORITY APPLN. INFO.:			US 2002-189146	A2 20020703
			WO 2003-US21348	W 20030703
OTHER SOURCE(S):	MARPAT 140:93931			
GI				





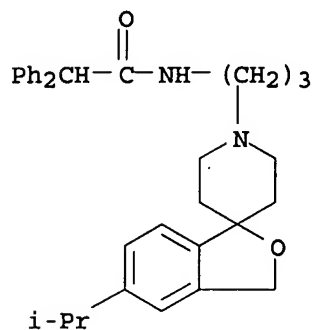
- AB This invention is directed to spirocyclic piperidines (shown as I; variables defined below; e.g. 4-phenyl-N-[6-(spiro[indane-1,4-piperidine]-10-yl)hexyl]benzamide (II)) that are selective antagonists for melanin concentrating hormone-1 (MCH1) receptors. The invention provides a pharmaceutical composition comprising a therapeutically effective amount of the compound of the invention and a pharmaceutically acceptable carrier. This invention provides a pharmaceutical composition made by combining a therapeutically effective amount of the compound of this invention and a pharmaceutically acceptable carrier. This invention further provides a process for making a pharmaceutical composition comprising combining a therapeutically effective amount of the compds. of the invention and a pharmaceutically acceptable carrier. This invention also provides a method of reducing the body mass of a subject, treating a subject suffering from depression and/or anxiety, and treating a subject suffering from a urinary disorder. Binding consts. for .apprx.100 examples of I to MCH1 are tabulated, e.g. 2.4 nM for 2,2-bis(4-fluorophenyl)-N-[3-(spiro[indene-1,4'-piperidine]-10-yl)propyl]acetamide. Although the methods of preparation are not claimed, .apprx.10 example preps. are included. For example, II was prepared as part of a library from 6-(spiro[indane-1,4'-piperidine]-10-yl)hexylamine and 4-phenylbenzoyl chloride and either Hunig's base/CH<sub>2</sub>Cl<sub>2</sub>, 2 equiv Et<sub>3</sub>N/3:1 THF-CH<sub>2</sub>Cl<sub>2</sub> or 2 equiv Et<sub>3</sub>N/THF. For I: the dashed side of the ring is CH<sub>2</sub>, O, -CO-, -CO<sub>2</sub>-, -CH<sub>2</sub>CH<sub>2</sub>- or -CHCH-; t = 0-1 and the cyclic ring containing t is 5 or 6-membered; n = 1-6; each R<sub>1</sub> and R<sub>2</sub> = H, F, Cl, Br, I, straight chained or branched C<sub>1</sub>-C<sub>7</sub> alkyl, monofluoroalkyl or polyfluoroalkyl, aryl or heteroaryl; each R<sub>3</sub> = H, C<sub>1</sub>-C<sub>6</sub> straight chained or branched alkyl, (un)substituted aryl or heteroaryl (substituents = ≥1 F, Cl, Br, I, R<sub>2</sub>, straight chained or branched C<sub>1</sub>-C<sub>7</sub> alkyl, aryl, phenoxy or heteroaryl); and two R<sub>3</sub> moieties taken together can form a C<sub>3</sub>-C<sub>6</sub> cycloalkyl.
- IT 644974-13-0P, 2,2-Bis(4-fluorophenyl)-N-[3-(spiro[indene-1,4'-piperidine]-10-yl)propyl]acetamide 644974-15-2P, N-[3-(1-Oxo-1,3-dihydrospiro[isobenzofuran-3,4'-piperidine]-10-yl)propyl]-2,2-diphenylacetamide  
 RL: CPN (Combinatorial preparation); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); CMBI (Combinatorial study); PREP (Preparation); USES (Uses)  
 (drug candidate; preparation of spirocyclic piperidines as selective MCH1 antagonists with therapeutic uses)
- RN 644974-13-0 CAPLUS
- CN Benzeneacetamide, 4-fluoro-α-(4-fluorophenyl)-N-(3-spiro[1H-indene-1,4'-piperidin]-1'-ylpropyl)- (9CI) (CA INDEX NAME)

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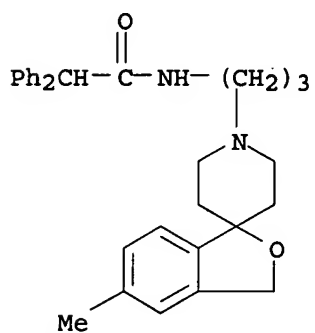
RN 644975-21-3 CAPLUS

CN Benzeneacetamide, N-[3-[5-(1-methylethyl)spiro[isobenzofuran-1(3H),4'-piperidin]-1'-yl]propyl]-α-phenyl- (9CI) (CA INDEX NAME)



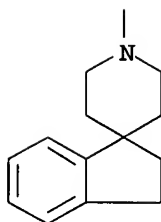
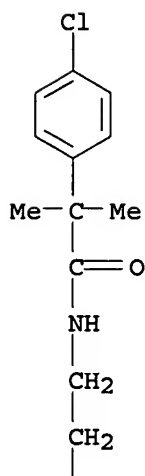
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CN Benzeneacetamide, N-[3-(5-methylspiro[isobenzofuran-1(3H),4'-piperidin]-1'-yl)propyl]-α-phenyl- (9CI) (CA INDEX NAME)



RN 644975-25-7 CAPLUS

CN Benzeneacetamide, 4-chloro-N-[2-(2,3-dihydrospiro[1H-indene-1,4'-piperidin]-1'-yl)ethyl]-α,α-dimethyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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L4 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN

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L4 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN

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L4 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN

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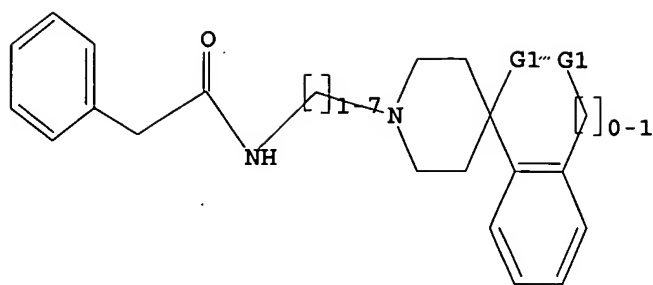
L4 4 S L3

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L1 HAS NO ANSWERS

L1 STR

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G1 C,O

Structure attributes must be viewed using STN Express query preparation.

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